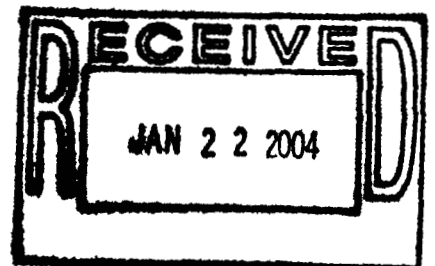


NOTICE

All drawings located at the end of the document.

**Draft Industrial Area
Sampling and Analysis Plan
FY04 Addendum #IA-04-~~05~~09
IHSS Group 600-5**



January 2004

ADMIN RECORD

IA-A-001925

1/14

**Draft Industrial Area
Sampling and Analysis Plan
FY04 Addendum #IA-04-05
IHSS Group 600-5**

Approval received from the Colorado Department of Public Health and Environment

()

Approval letter contained in the Administrative Record

January 2004

TABLE OF CONTENTS

1 0 INTRODUCTION	1
2 0 EXISTING CHARACTERIZATION INFORMATION	1
3 0 SAMPLING	6
4 0 REFERENCES	6

LIST OF FIGURES

Figure 1 IHSS Group 600-5 (PAC 600-1004) and Overlapping IHSSs and PACs Location Map	3
Figure 2 IHSS Group 600-5 (PAC 600-1004) Existing Surface Soil Sample Results Greater Than DLs or Background Means Plus Two Standard Deviations	4
Figure 3 IHSS Group 600-5 (PAC 600-1004) Existing Subsurface Soil Sample Results Greater Than DLs or Background Means Plus Two Standard Deviations	5
Figure 4 IHSS Group 600-5 (PAC 600-1004) Proposed Sampling Locations	10

LIST OF TABLES

Table 1 IHSS Group 600-5 PCOCs	1
Table 3 IHSS Group 600-5 Sampling Summary	6
Table 2 IHSS Group 600-5 Sampling Specifications	8

ACRONYMS

AL	action level
CDPHE	Colorado Department of Public Health and Environment
DOE	U S Department of Energy
EPA	U S Environmental Protection Agency
FY	Fiscal Year
HPGe	high-purity germanium
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
MDL	method detection limit
mg/kg	milligrams per kilogram
N/A	not applicable
NFAA	no further accelerated action
PAC	Potential Area of Concern
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
RFCA	Rocky Flats Cleanup Agreement
SAP	Sampling and Analysis Plan
SVOC	semivolatile organic compound
UBC	Under Building Contamination
ug/kg	micrograms per kilogram
VOC	volatile organic compound
WRW	Wildlife Refuge Worker

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) Addendum #IA-04-05 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSSs, Potential Areas of Concern (PACs), and Under Building Contamination (UBC) Sites proposed for characterization during Fiscal Year (FY) 04. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for IHSS Group 600-5. IHSS Group 600-5 consists of the Central Avenue Ditch Cleaning (PAC 600-1004). The location of the PAC site and IHSS Group 600-5 is shown on Figure 1.

2.0 EXISTING CHARACTERIZATION INFORMATION

PAC 600-1004 is an area of soil previously removed from the Central Avenue Ditch. Potentially contaminated soil from areas along Central Avenue Ditch (IHSS 190) (Figure 1) were excavated and spread into the level area adjacent to the two large fuel oil tanks located at the southwestern corner of Central Avenue and Seventh Street (IHSS 152). This activity was observed by the CDPHE in September of 1993 and the operation was immediately shut down due to the potential of cross contaminating IHSSs. The area where the excavated soil was spread is designated as Central Avenue Ditch Cleaning PAC 600-1004.

Existing concentrations and activities in soil greater than the method detection limits (MDLs) or background means plus two standard deviations are presented on Figures 2 and 3. Existing information and data for this IHSS are available in Appendix C of the IASAP (DOE 2001), the Historical Release Reports (HRRs) (DOE 1992-2003, 1999), and the Final Closeout Report for IHSS Group 600-2 (PAC 400-802, Storage Shed South of Building 334) (DOE 2003). Table 1 presents the PCOCs and proposed sampling methodologies.

Table 1
IHSS Group 600-5 PCOCs

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Data Source	Sampling Location Method
600-5	PAC 600-1004 – Central Avenue Ditch Cleaning	Metals Radionuclides SVOCs VOCs	Surface and subsurface soil	HRRs (DOE 1992-2003, 1999) IASAP (DOE 2001) Closeout Report for IHSS Group 600-2 (DOE 2003) Process knowledge	Statistical grid

Previous data for IHSS Group 600-5 indicate no detections of analytes greater than the Rocky Flats Cleanup Agreement (RFCA) Wildlife Refuge Worker (WRW) action levels (ALs) (DOE et al. 2003). Concentrations of lead in surface and subsurface soil were reported at levels exceeding the ecological receptor AL. Radionuclide activities, and concentrations of metals, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs) were reported above corresponding background means plus two standard deviations in surface soil and subsurface soil (Figures 2 and 3).

IHSS Group 600-5 is located in close proximity to other potential contaminant sources (Figure 1) and overlaps with portions of the following IHSSs:

- Eastern half of IHSS Group 600-2 (IHSS 400-802 – Storage Shed South of Building 334) No further accelerated action (NFAA) approved June 2003,
- Northern portion of IHSS 152 NFAA approved September 1999,
- Northeastern portion of IHSS 157 1 (included in IHSS Group 400-7 and currently being investigated), and
- An approximately 335-foot section of IHSS 190 (Central Avenue Ditch) and will be investigated in the future

No portion of PAC 600-1004 lies outside of other potential contaminant sources

3.0 SAMPLING

The proposed sampling specifications (number and type of samples) for IHSS Group 600-5 (PAC 600-1004) are listed in Table 2 and shown on Figure 4. A 36-foot statistical grid was applied at PAC 600-1004. The western half of IHSS Group 600-5 (PAC 600-1004) does not contain any proposed sampling locations because accelerated action samples were collected in this area as part of the IHSS Group 600-2 (PAC 400-802) characterization activities (DOE 2003). Additionally, no samples are proposed to be collected from within the Central Avenue Ditch (IHSS 190) as this IHSS will be addressed as part of the IHSS Group 000-3 SAP Addendum and RSOP Notification.

The IHSS Group 600-5 sampling summary is presented in Table 3.

Table 3
IHSS Group 600-5 Sampling Summary

Category	Total
Number of Sampling Locations	8
Number of Samples	16
Number of Metal Analyses	16
Number of Radionuclide Analyses	16
Number of SVOC Analyses	16
Number of VOC Analyses	8

Proposed new sampling locations are the starting point for IHSS Group characterization. After characterization starts, the number and type of samples may change based on sample results. Changes to sampling specifications will be considered in consultation with the regulatory agencies. If contaminant concentrations are found to be above ALs near the grid boundary, additional samples will be collected in consultation with the regulatory agencies and a contact record will be issued. Biased sampling locations will be field checked and the locations adjusted through the consultative process.

4.0 REFERENCES

DOE, 1992-2003, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado

DOE, 1999, Annual Historical Release Report for the Rocky Flats Plant, Golden, Colorado September

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, 2003, Final Closeout Report for IHSS Group 600-2 (PAC 400-802, Storage Shed South of Building 334), Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, CDPHE, and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement, U S Department of Energy, Colorado Department of Public Health and Environment,

and U S Environmental Protection Agency, Rocky Flats Environmental Technology Site,
Golden, Colorado, June

Table 2
IHSS Group 600-5 Sampling Specifications

IHSS Group	IHSS/PAC/ UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
600-5	600-1004	CA39-013	2082873 101	749248 448	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-013	2082873 101	749248 448	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-013	2082873 101	749248 448	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-013	2082873 101	749248 448	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-013	2082873 101	749248 448	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-013	2082873 101	749248 448	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-013	2082873 101	749248 448	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004
		CA39-014	2082847 257	749273 51	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-014	2082847 257	749273 51	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-014	2082847 257	749273 51	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-014	2082847 257	749273 51	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-014	2082847 257	749273 51	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-014	2082847 257	749273 51	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-015	2082907 727	749258 298	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-015	2082907 727	749258 298	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-015	2082907 727	749258 298	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-015	2082907 727	749258 298	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-015	2082907 727	749258 298	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-015	2082907 727	749258 298	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CA39-016	2082881 883	749283 36	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004
		CB39-005	2082942 353	749268 148	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-005	2082942 353	749268 148	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-005	2082942 353	749268 148	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004

IHSS Group	IHSS/PAC/ UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
		CB39-005	2082942 353	749268 148	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-005	2082942 353	749268 148	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-005	2082942 353	749268 148	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-005	2082942 353	749268 148	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-006	2083002 823	749252 936	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-007	2082976 979	749277 998	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Surface soil	0 0-0 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Surface soil	0 0-0 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Surface soil	0 0-0 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Subsurface soil	0 5-2 5'	Metals	6010	6010	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Subsurface soil	0 5-2 5'	Radionuclides	HPGe	HPGe	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Subsurface soil	0 5-2 5'	SVOCs	N/A	8270	Statistical grid for PAC 600-1004
		CB39-008	2083011 606	749281 848	Subsurface soil	0 5-2 5'	VOCs	8260	8260	Statistical grid for PAC 600-1004

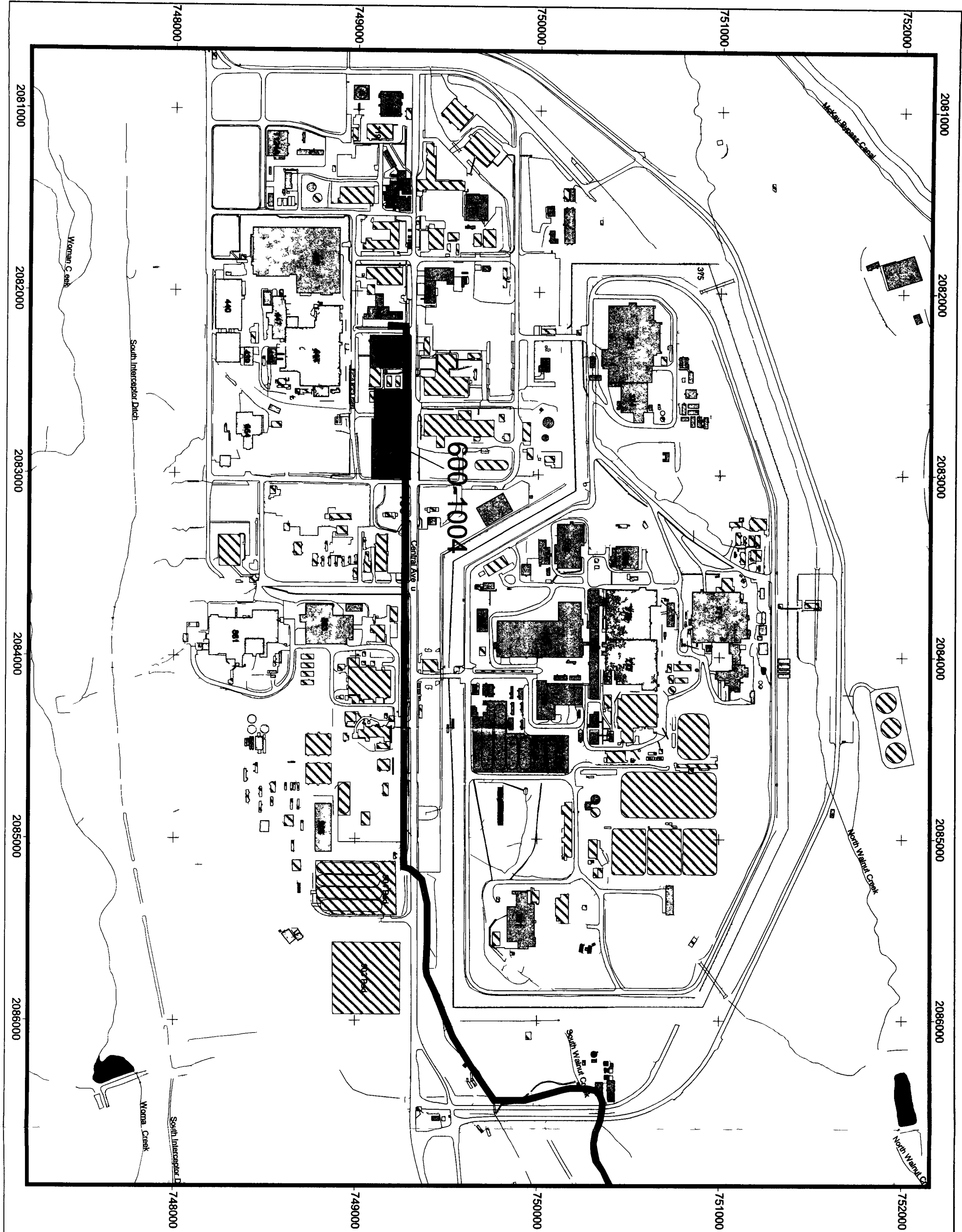



Figure 1
IHSS Group 600 5
(PAC 600 1004)
and Overlapping IHSSs
and PACs Location Map


KEY

 PAC 600 1004

 Overlapping IHSSs and PACs
Not Part of IHSS Group 600 5


 IHSS 152


 IHSS 157 1

 IHSS 190

 PAC 400-802

 Demolished structure

 Structure

 Paved area

 Dirt road

 Stream ditch or other
drainage

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State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by



Prepared for



KAISER-HILL
COMPANY

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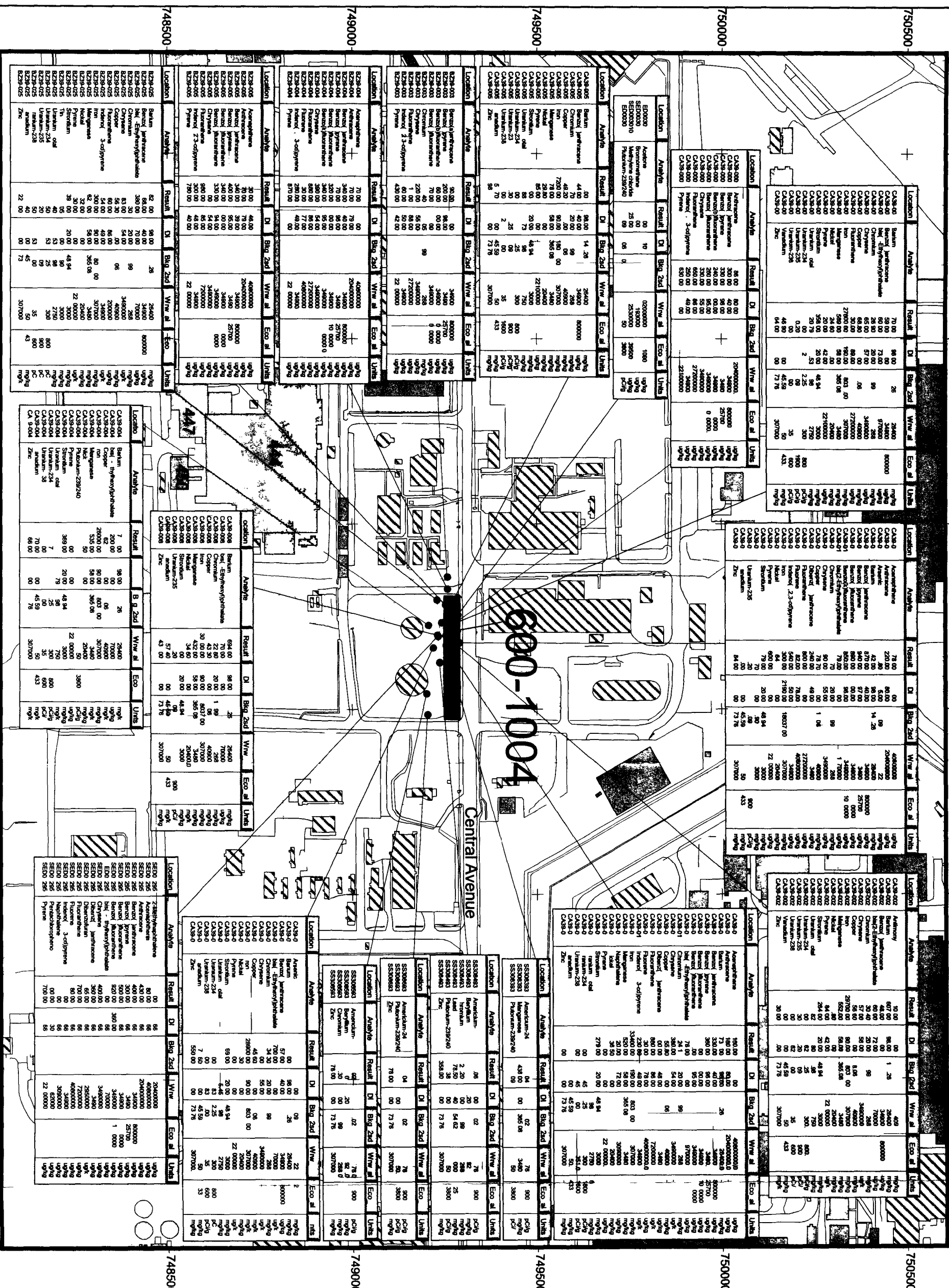


Figure 2

**IHSS Group 600 5
(PAC 600 1004)**

**Existing Surface Soil
Sampling Results
Greater Than DLS**

Background Means Plus Two Standard Deviations

KEY

- Surface soil sampling location with results greater than ecological action levels
- Surface soil sampling location with results greater than background means plus two standard deviations or DLs

PAC 600 1004

PAC 600 1004

Demolished structure

Structure

Paved area

Dirt road

Stream ditch or other drainage

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State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy

Rocky Flats Environmental Technology Site

Prepared by

Prepared for



Figure 3

IHSS Group 600 5
(PAC 600 1004)
Existing Subsurface Soil
Sampling Results
Greater Than DLS

Background Means
or
Plus Two Standard Deviations

KEY

- Subsurface soil sampling location with results greater than ecological action levels
- Subsurface soil sampling location with results greater than background means plus two standard deviations or DLS
- PAC 600-1004
- Demolished structure
- Structure
- Paved area
- Dirt road
- Stream ditch or other drainage

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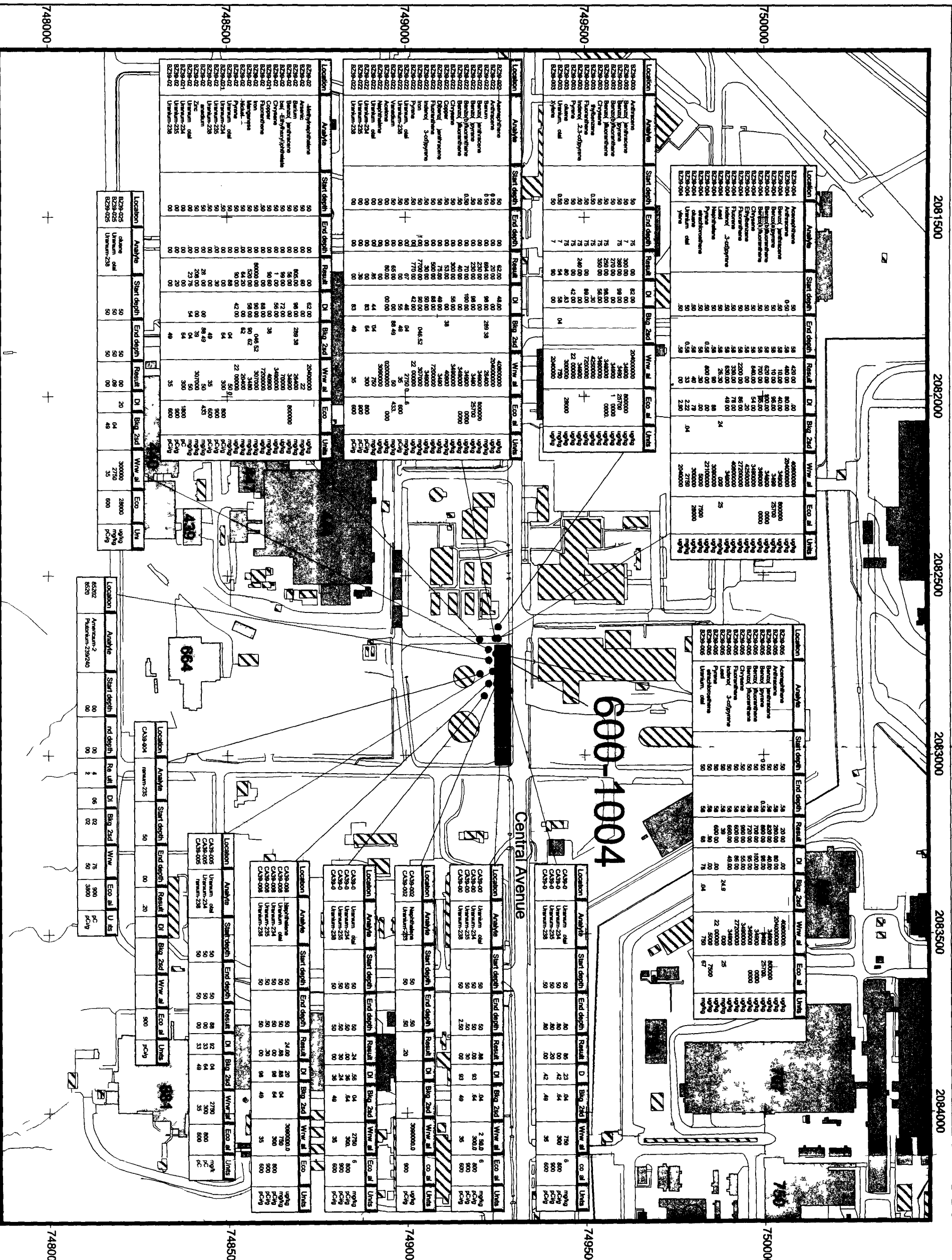
State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

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Prepared by



Prepared for



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2082900

2083000

2083100

749100

749200

749300

749400

600-1004

Figure 4

IHSS Group 600 5
(PAC 600 1004)

Proposed Sampling Locations

KEY

- Statistical sampling location
- Sampling location from PAC 400-802 characterization

PAC 600-1004

PAC 400-802

IHSS 152

Demolished structure

Structure

Paved area

Dirt road

Stream ditch or other
drainage

DRAFT



20 0 20 40 Feet
Scale = 1 750

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

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